DB Name	Query	Hit Count	Set Name
USPT	l15 and l4	2	L16
USPT	l1 same (capability or capabilities)	93	L15
USPT	l1 and (capability or capabilities)	587	L14
USPT	l7 and (capability or capabilities)[ti,ab]	1	L13
USPT	l4 and l10	0	L12
USPT	l10 and l1	2	L11
USPT	mediabase or (media base)	1739	L10
USPT	l7 and l6	1	L9
USPT	l7 and l4	6	L8
USPT	l1[ti,ab]	97	L7
USPT	((709/203)!.CCLS.)	865	L6
USPT	l2 and l4	1	L5
USPT	((709/228 or 709/231).ccls.)	631	L4
USPT	l2 same (file or packet$ or frame$ or stream$ or bandwidth or (band width))	11	L3
USPT	l1 near10 (tailor$ or custom$)	29	L2
USPT	qos or (quality of service)	1625	L1

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L16: Entry 1 of 2 File: USPT Nov 28, 2000

DOCUMENT-IDENTIFIER: US 6154778 A
TITLE: Utility-based multi-category quality-of-service negotiation in distributed systems

BSPR:
A user of a foreign exchange trading system might access the trading system using a laptop computer at multiple connection points which include a remote dial-up connection and a connection on a local area network (LAN) supporting a server which provides the trading services. The QoS requirements of the user and the capability of the connection to support particular QoS levels can change depending on the connection point of the user. For example, due to geographic proximity, the user's requirement for security will be relatively low when connected directly to the LAN supporting the server as compared to the need for security when connected via the dial-up connection. The dial-up connection might not be able to support as high a performance level as the direct connection on the LAN. Furthermore, resource availability at the same connection point can fluctuate, thereby impacting the user's preferred or required QoS levels with regard to performance and security.

BSPR:
To enable application-system transparency, applications associated with the server are enabled to generate preliminary QoS specifications. The preliminary QoS specifications do not reflect the capability of resources to support particular QoS levels because requiring the server applications to possess such detailed low level information would create a substantial burden on the applications. The application-generated preliminary QoS specifications are then filtered to modify the dimension values according to capabilities of resources of the distributed system to support QoS levels. Filtering a preliminary QoS specification can generate multiple QoS specifications.

BSPR:
The server preferably employs a handler class to determine whether system components are capable of supporting QoS levels specified for those dimensions based on commitments previously assigned to the components. The server invokes the handler class to determine whether to accept a particular offer. Even though the server has filtered the preliminary application-generated QoS specification to generally reflect the capabilities of the system components to support specific QoS levels, the previously assigned commitments, which are not taken into account in the filtering process, might prevent the components from supporting the modified QoS levels.

BSPR:
The present invention provides the advantage of an application-independent generic negotiation protocol. That is, the negotiation protocol is not limited to multi-media applications or any other type of application. Another advantage lies in the efficient allocation of system resources resulting from a QoS agreement narrowly tailored to server capabilities and client requirements. Yet another advantage is that applications are enabled to offer a service in multiple QoS modes. Another advantage is that the invention provides application-system transparency by allowing applications to generate QoS specifications independently of the environment and system in which they operate.

DEPR:
Referring to FIG. 1, a utility-based embodiment of the multi-category QoS negotiation includes a server operating mode 15 which includes a server guarantee 11 and a server requirement 13, which essentially is a utility function. The

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Term: l4 same html

Display: 10 **Documents in Display Format:** REV, KW **Starting with Number** 1

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DB Name	Query	Hit Count	Set Name
USPT	l8 and l6	1	L9
USPT	l4 same (bandwidth or (band width))	12	L8
USPT	((709/203)!.CCLS.)	1059	L7
USPT	(709/228 OR 709/231).CCLS.	701	L6
USPT	l4 same html	11	L5
USPT	(scalab$ or adapt$) near10 client near10 server	321	L4
USPT	multimedia near4 (html file)	3	L3
USPT	5953506[pn]	1	L2
USPT	5727159[pn]	1	L1

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Term: 14 and 110

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Today's Date: 3/26/2001

DB Name	Query	Hit Count	Set Name
USPT	l4 and l10	0	L12
USPT	l10 and l1	2	L11
USPT	mediabase or (media base)	1739	L10
USPT	l7 and l6	1	L9
USPT	l7 and l4	6	L8
USPT	l1[ti,ab]	97	L7
USPT	((709/203)!.CCLS.)	865	L6
USPT	l2 and l4	1	L5
USPT	((709/228 or 709/231).ccls.)	631	L4
USPT	l2 same (file or packet$ or frame$ or stream$ or bandwidth or (band width))	11	L3
USPT	l1 near10 (tailor$ or custom$)	29	L2
USPT	qos or (quality of service)	1625	L1

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Term: 17 and 16

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Search History

Today's Date: 3/26/2001

DB Name	Query	Hit Count	Set Name
USPT	l7 and l6	1	L9
USPT	l7 and l4	6	L8
USPT	l1[ti,ab]	97	L7
USPT	((709/203)!.CCLS.)	865	L6
USPT	l2 and l4	1	L5
USPT	((709/228 or 709/231).ccls.)	631	L4
USPT	l2 same (file or packet$ or frame$ or stream$ or bandwidth or (band width))	11	L3
USPT	l1 near10 (tailor$ or custom$)	29	L2
USPT	qos or (quality of service)	1625	L1

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L3: Entry 5 of 11 File: USPT Smith Oct 3, 2000

DOCUMENT-IDENTIFIER: US 6128649 A
TITLE: Dynamic selection of media streams for display

DEPR:
Many currently standardized video conferencing architectures adopt a frame-based versus packet-based approach to digital media transmission. In the frame based approach, media streams are interleaved at the source and so these streams maintain specific relational and positional significance within the frame. Upon reception of an ITU H.320 frame for example, the receiver knows the exact contents of the frame (e.g. media stream types), their location within the frame, as well as their temporal relation. This eases the chore of intrastream and interstream synchronization at the receiver, however it forces all receivers to receive the exact same quality and quantity of media streams, namely everything. As networks become less connection oriented (e.g. POTS, ISDN) and more packet-based (e.g. legacy LANs and even ATM!), a packet-oriented approach becomes more desirable. A packet approach enables media stream separation, thus allowing receivers to arbitrarily choose individual streams, while benefiting from such networking facilities as QoS and dynamic multicast connectivity which can be tailored to the individual media stream being transmitted. While they are not in the majority, packet based video conferencing architectures are being developed. ITU's H.323 is a packet oriented conferencing standard which enables stream separation at the network level.

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Search Results - Record(s) 1 through 1 of 1 returned.

☐ 1. Document ID: US 6154778 A

L5: Entry 1 of 1 File: USPT Nov 28, 2000

US-PAT-NO: 6154778
DOCUMENT-IDENTIFIER: US 6154778 A

bwd Date 5/19/98

TITLE: Utility-based multi-category quality-of-service negotiation in distributed systems

DATE-ISSUED: November 28, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Koistinen; Jari	Palo Alto	CA	N/A	N/A
Seetharaman; Aparna	Redwood City	CA	N/A	N/A
Kirshenbaum; Evan R.	Mountain View	CA	N/A	N/A

US-CL-CURRENT: 709/228; 370/230, 370/395, 709/227, 709/239, 709/240

ABSTRACT:

In a distributed system, a method and system for negotiating a multi-category Quality-of-Service (QoS) agreement between a client and a server includes a client agent enabled to calculate an expected utility to a client of multiple multi-category QoS specifications. The client agent obtains the QoS specifications by transmitting a QoS specification request to a server agent or a broker. The expected utility calculation, based on a probabilistic estimate of QoS levels included in the QoS specifications, enables the client agent to distinguish the QoS specifications of greater value from those of lesser value. The client agent selects at least one of the QoS specifications to be included into an offer for a QoS agreement based on the expected utility calculation. In a preferred embodiment, the client agent selects the QoS specifications determined to be most valuable to the client. The offer is transmitted to the server agent to request a service provided by a server at QoS levels represented by the selected QoS specifications. After transmitting the offer, the client monitors a connection to the server agent for either an acceptance, a rejection, or a counteroffer to the offer. Communication between the client agent and the server agent conforms to a negotiation protocol which provides a set of rules for transmission of negotiation messages.

19 Claims, 13 Drawing figures Exemplary Claim Number: 1
Number of Drawing Sheets: 12

L5: Entry 1 of 1 File: USPT Nov 28, 2000

DOCUMENT-IDENTIFIER: US 6154778 A
TITLE: Utility-based multi-category quality-of-service negotiation in distributed systems

BSPR:
The present invention provides the advantage of an application-independent generic negotiation protocol. That is, the negotiation protocol is not limited to multi-media applications or any other type of application. Another advantage lies in the efficient allocation of system resources resulting from a QoS agreement narrowly tailored to server capabilities and client requirements. Yet another advantage is that applications are enabled to offer a service in multiple QoS modes. Another advantage is that the invention provides application-system transparency by allowing applications to generate QoS specifications independently of the environment and system in which they operate.

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709/228

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Term	Documents
(2 AND 4).USPT.	1

Display 10 Documents, starting with Document: 1

Display Format: REV,KW Change Format

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L3: Entry 8 of 11 File: USPT Aug 31, 1999

DOCUMENT-IDENTIFIER: US 5944795 A
TITLE: Client-server architecture using internet and guaranteed quality of service networks for accessing distributed media sources

ABPL:
An improved client-server architecture of the present invention utilizes the advantages of known QOS networks to provide guaranteed quality of service, security, and a charge mechanism for handling requests initiated over a packet network, such as the Internet, for access to distributed media sources. Such media sources may be independent of the QOS network provider and may be located by browsing the Internet. A method of operating a client-server network enables the system level merger of the Internet and a guaranteed QOS network, such as the public switched telephone network, in order to provide the users with a complete information superhighway today. It will appear to the average user that the Internet and the QOS network are fused together. Thus, when a user, connected to the Internet, selects an application that requires functionalities offered by the telephone network, such as guaranteed QOS delivery of media information or customized billing, the Internet-resident application will communicate information to a server, which will in turn initiate a session over the QOS network for delivery of the required information to the client using client information transmitted from the client (or from the application) to the server over the established Internet session. The client information may include a client account number, login and password, and/or phone number to enable the server to establish the switched network connection to the client. Accordingly, media sources which are separate and independent from the QOS network provider may be accessed using a secure, guaranteed QOS network in a manner providing for ease of identification and billing.